

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

- (i) APPLICANT: (other than US) WESTERN HEALTH CARE NETWORK  
(US only): LOCARNINI, S A, BARTHOLMEUSZ, A I, De MAN, R.
- (ii) TITLE OF INVENTION: VIRAL VARIANTS AND METHODS FOR DETECTING SAME
- (iii) NUMBER OF SEQUENCES: 20
- (iv) CORRESPONDENCE ADDRESS:  
(A) ADDRESSEE: DAVIES COLLISON CAVE  
(B) STREET: 1 LITTLE COLLINS STREET  
(C) CITY: MELBOURNE  
(D) STATE: VICTORIA  
(E) COUNTRY: AUSTRALIA  
(F) ZIP: 3000
- (v) COMPUTER READABLE FORM:  
(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25
- (vi) CURRENT APPLICATION DATA:  
(A) APPLICATION NUMBER: INTERNATIONAL (PCT)  
(B) FILING DATE: 15-AUG-1997
- (vii) PRIOR APPLICATION DATA:  
(A) APPLICATION NUMBER: AU PROVISIONAL  
(B) FILING DATE: 08-NOV-1996
- (viii) ATTORNEY/AGENT INFORMATION:  
(A) NAME: HUGHES DR, E JOHN L  
(C) REFERENCE/DOCKET NUMBER: EJH/AF
- (ix) TELECOMMUNICATION INFORMATION:  
(A) TELEPHONE: +61 3 9254 2777  
(B) TELEFAX: +61 3 9254 2770

- 28 -

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GGA GTG TGG ATT CGC ACT CC

20

(2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GCT CCA AAT TCT TTA TA

17

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

CCT TTA CCC CGT TGC CCG GC

20

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

GCT CCA AAT TCT TTA TA

17

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

- 29 -

- (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:  
 GCC GCG TCG CAG AAG ATC TCA AT 23
- (2) INFORMATION FOR SEQ ID NO:6:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:  
 GGT TCT ATC CTA ACC TTA CC 20
- (2) INFORMATION FOR SEQ ID NO:7:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 23 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:  
 GCC TCA TTT TGT GGG TCA CCA TA 23
- (2) INFORMATION FOR SEQ ID NO:8:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 21 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:  
 TGG GGG TGG AGC CCT CAG GCT 21
- (2) INFORMATION FOR SEQ ID NO:9:  
 (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear  
 (ii) MOLECULE TYPE: DNA  
 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:  
 CAC AAC ATT CCA CCA AGC TC 20

- 30 -

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

AAA TTC GCA GTC CCC AAC

18

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

GTT TCC CTC TTC TTG CTG T

19

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

TTT TCT TTT GTC TTT GGG TAT

21

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

CCA ACT TAC AAG GCC TTT CTG

21

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single

- 31 -

(D) TOPOLOGY: linear

(iii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

CAT CGT TTC CAT GGC TGC TAG GC

23

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

GTT TCC CTC TTC TTG CTG T

19

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

ATA CCC AAA GAC AAA AGA AAA

21

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 550 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..549

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

TCT TCC AAT TTG TCC TGG TTA TCG CTG GAT GTG TCT GCG GCG TTT TAT	48
Ser Ser Asn Leu Ser Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr	
1 5 10 15	

CAT ATT CCT CTT CAT CCT GCT GCT ATG CCT CAT CTT ATT GGT TCT	96
His Ile Pro Leu His Pro Ala Ala Met Pro His Leu Leu Ile Gly Ser	
20 25 30	

TCT GGA TTA TCA AGG TAT GTT GCC CGT TTG TCC TCT AAT TCC AGG ATC	144
Ser Gly Leu Ser Arg Tyr Val Ala Arg Leu Ser Ser Asn Ser Arg Ile	

- 32 -

	35	40	45	
AAC AAC AAC ATG CAA AAC CTG CAC GAC TCC TGC TCA AGG CAA CTC TAC Asn Asn Asn Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln Leu Tyr	50	55	60	192
GTT TCC CTC ATG TTG CTG TAC AAA ACC TAC GGA GAG AAA TTG CAC CTG Val Ser Leu Met Leu Tyr Lys Thr Tyr Gly Glu Lys Leu His Leu	65	70	75	240
TAT TCC CAT CCC ATC GTC CTG GGC TTT CGC AAA ATA CCT ATG GGA GTG Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met Gly Val	85	90	95	288
GGC CTC AGT CCG TTT CTC TTG GCT CAG TTT ACT AGT GCC ATT TGT TCA Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Cys Ser	100	105	110	336
GTG GTT CGT AGG GCT TTC CCC CAC TGT TTG GCT TTC AGC TAT ATG GAT Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp	115	120	125	384
GAT GTG GTA TTG GGG GCC AAG TCT CTA CAG CAT CGT GAG GCC CTT TAT Asp Val Val Leu Gly Ala Lys Ser Val Gln His Arg Glu Ala Leu Tyr	130	135	140	432
ACC GCT GTT ACC AAT TTT CTT TTG TCT CTG GGT ATA CAT TTA AAC CCT Thr Ala Val Thr Asn Phe Leu Ser Leu Gly Ile His Leu Asn Pro	145	150	155	480
AAC AAA ACA AAA AGA TGG GGT TAT TCC CTA AAC TTC ATG GGT TAC ATA Asn Lys Thr Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met Gly Tyr Ile	165	170	175	528
ATT GGA AGT TGG GGA ACA TTG C Ile Gly Ser Trp Gly Thr Leu	180			550

## (2) INFORMATION FOR SEQ ID NO:18:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 183 amino acids  
 (B) TYPE: amino acid  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Ser Ser Asn Leu Ser Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr	1	5	10	15
His Ile Pro Leu His Pro Ala Ala Met Pro His Leu Leu Ile Gly Ser	20		25	30
Ser Gly Leu Ser Arg Tyr Val Ala Arg Leu Ser Ser Asn Ser Arg Ile	35	40	45	
Asn Asn Asn Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln Leu Tyr	50	55	60	
Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Glu Lys Leu His Leu	65	70	75	80
Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met Gly Val	85	90	95	

- 33 -

Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe-Thr Ser Ala Ile Cys Ser  
 100 105 110  
 Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp  
 115 120 125  
 Asp Val Val Leu Gly Ala Lys Ser Val Gln His Arg Glu Ala Leu Tyr  
 130 135 140  
 Thr Ala Val Thr Asn Phe Leu Leu Ser Leu Gly Ile His Leu Asn Pro  
 145 150 155 160  
 Asn Lys Thr Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met Gly Tyr Ile  
 165 170 175  
 Ile Gly Ser Trp Gly Thr Leu  
 180

## (2) INFORMATION FOR SEQ ID NO:19:

*Mrb*  
*BL*  
*CW*

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 550 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: DNA

- (ix) FEATURE:
  - (A) NAME/KEY: CDS
  - (B) LOCATION: 2..550

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

T CTT CCA ATT TGT CCT GGT TAT CGG TGG ATG TGT CTG CGG CGT TTT Leu Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe 1 5 10 15	46
ATC ATA TTC CTC TTC ATC CTG CTG CTA TGC CTC ATC TTC TTA TTG GTT Ile Ile Phe Leu Phe Ile Leu Leu Cys Leu Ile Phe Leu Leu Val 20 25 30	94
CTT CTG GAT TAT CAA GGT ATG TTG CCC GTT TGT CCT CTA ATT CCA GGA Leu Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Ile Pro Gly 35 40 45	142
TCA ACA ACA ACA TGC AAA ACC TGC ACG ACT CCT GCT CAA GGC AAC TCT Ser Thr Thr Cys Lys Thr Cys Thr Pro Ala Gln Gly Asn Ser 50 55 60	190
ACG TTT CCC TCA TGT TGC TGT ACA AAA CCT ACG GAG AGA AAT TGC ACC Thr Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Glu Arg Asn Cys Thr 65 70 75	238
TGT ATT CCC ATC CCA TCG TCC TGG GCT TTC GCA AAA TAC CTA TGG GAG Cys Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Lys Tyr Leu Trp Glu 80 85 90 95	286
TGG GCC TCA GTC CGT TTC TCT TGG CTC AGT TTA CTA GTG CCA TTT GTT Trp Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro Phe Val 100 105 110	334
CAG TGG TTC GTA GGG CTT TCC CCC ACT GTT TGG CTT TCA GCT ATA TGG Gln Trp Phe Val Gly Leu Ser Pro Thr Val Trp Leu Ser Ala Ile Trp 115 120 125	382

- 34 -

ATG ATG TGG TAT TGG GGG CCA AGT CTG TAC AGC ATC GTG AGG CCC TTT Met Met Trp Tyr Trp Gly Pro Ser Leu Tyr Ser Ile Val Arg Pro Phe 130 135	430
ATA CCG CTG TTA CCA ATT TTC TTT TGT CTC TGG GTA TAC ATT TAA ACC Ile Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile * Thr 145 150 155	478
CTA ACA AAA CAA AAA GAT GGG GTT ATT CCC TAA ACT TCA TGG GTT ACA Leu Thr Lys Gln Lys Asp Gly Val Ile Pro * Thr Ser Trp Val Thr 160 165 170 175	526
TAA TTG GAA GTT GGG GAA CAT TGC * Leu Glu Val Gly Glu His Cys 180	550

## (2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 183 amino acids  
 (B) TYPE: amino acid  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

*M*  
*M*

Leu Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe Ile 1 5 10 15
Ile Phe Leu Phe Ile Leu Leu Cys Leu Ile Phe Leu Leu Val Leu 20 25 30
Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Ile Pro Gly Ser 35 40 45
Thr Thr Thr Cys Lys Thr Cys Thr Pro Ala Gln Gly Asn Ser Thr 50 55 60
Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Glu Arg Asn Cys Thr Cys 65 70 75 80
Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Lys Tyr Leu Trp Glu Trp 85 90 95
Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro Phe Val Gln 100 105 110
Trp Phe Val Gly Leu Ser Pro Thr Val Trp Leu Ser Ala Ile Trp Met 115 120 125
Met Trp Tyr Trp Gly Pro Ser Leu Tyr Ser Ile Val Arg Pro Phe Ile 130 135 140
Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile * Thr Leu 145 150 155 160
Thr Lys Gln Lys Asp Gly Val Ile Pro * Thr Ser Trp Val Thr * 165 170 175
Leu Glu Val Gly Glu His Cys 180